

FIG. 1

CONT'D ON THE NEXT PAGE

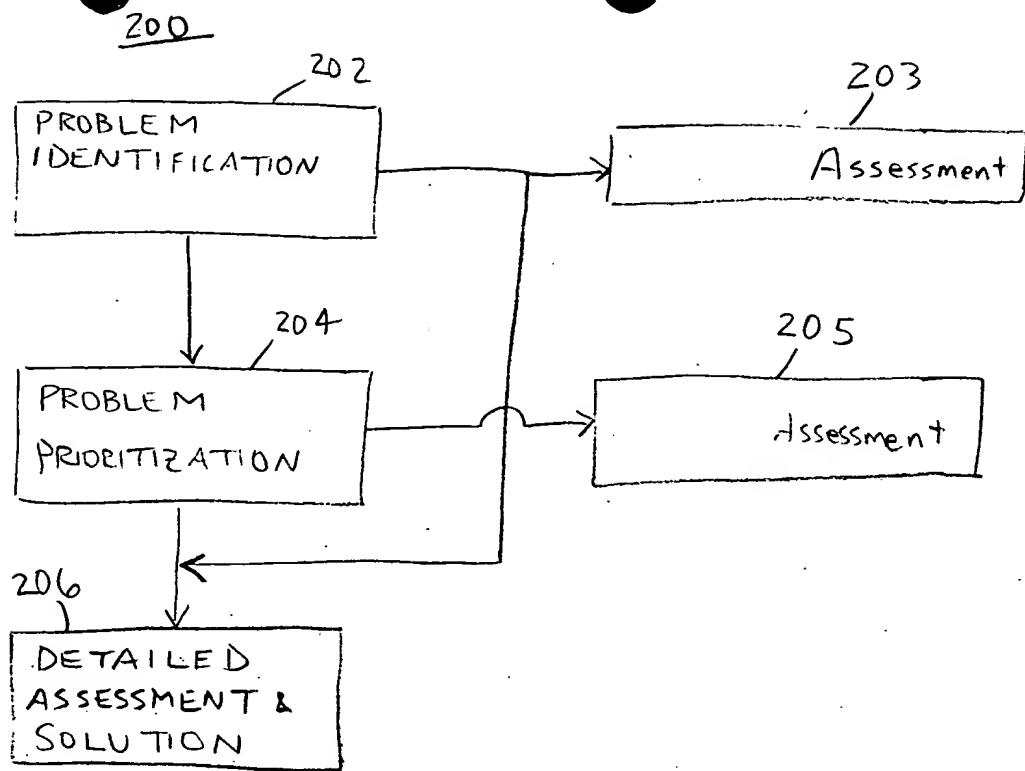


FIG. 2

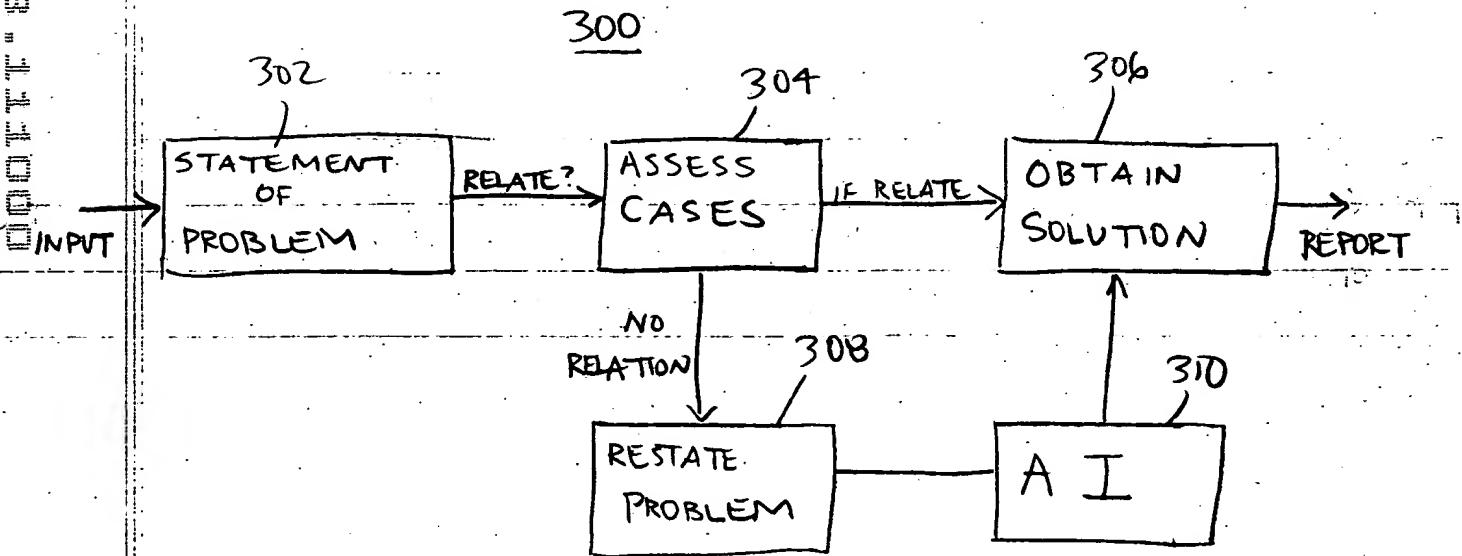


FIG. 3

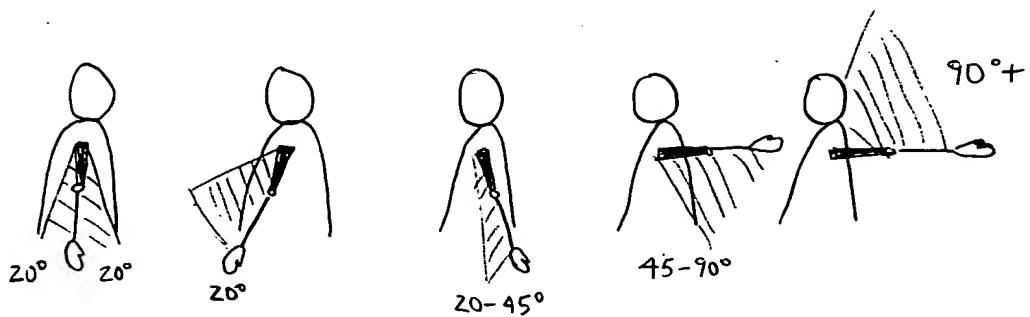


FIG. 7

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TASK/ACTION	Right	Left	Remove
R-1 Cutting of large shells			
Grasp shell		1	
Place shell on lathe		5	
Remove while rotating shell		5	
Replace shell		1	
Lower lever	5		
Raise lever	5		
R-2 Cutting of small shells			
Grasp shell		1	
Place shell on lathe		9	
Remove while rotating shell		9	

FIG. 4

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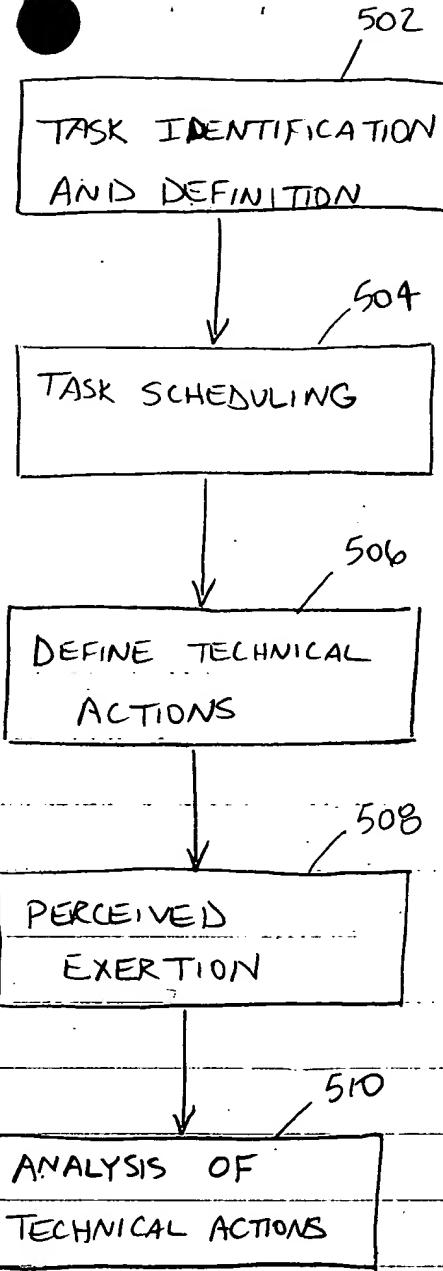


FIG. 5

DRAFT EDITION

0	NOTHING AT ALL
0.5	VERY, VERY WEAK (JUST NOTICEABLE)
1	VERY WEAK
2	WEAK (LIGHT)
3	MODERATE
4	SOMEWHAT STRONG
5	STRONG HEAVY
6	
7	VERY STRONG
8	
9	
10	VERY, VERY STRONG (ALMOST MAXIMUM)

FIG. 6

Shoulder Positions and Movements - Left Side

Abduction	<input checked="" type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Flexion	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Extension	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3

Performs work gestures of the same type involving the shoulder for more than 50% of the cycle/task time?

Keeps the arm raised (unsupported) by an angle more than 60 degrees or in extension for at least 10 sec. consecutively once every cycle (short cycle). For longer cycle time increase proportionately the time of the static contraction.

Keeps the arm raised(unsupported)
at 60 degrees for > 1 minute

**Shoulder Positions and Movements - Right Side**

Abduction	<input checked="" type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Flexion	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Extension	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3

Performs work gestures of the same type involving the shoulder for more than 50% of the cycle/task time?

Keeps the arm raised (unsupported) by an angle more than 60 degrees or in extension for at least 10 sec. consecutively once every cycle (short cycle). For longer cycle time increase proportionately the time of the static contraction.

Keeps the arm raised(unsupported)
at 60 degrees for > 1 minute

Elbow Movements - Left Side

Supination	<input checked="" type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Pronation	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Flexion	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3

Performs work gestures of the same type involving the Elbow for more than 50% of the cycle?

**Elbow Movements - Right Side**

Supination	<input checked="" type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Pronation	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3
Flexion	<input type="checkbox"/>	n/a	<input type="checkbox"/>	1/3	<input type="checkbox"/>	2/3	<input type="checkbox"/>	3/3

Performs work gestures of the same type involving the Elbow for more than 50% of the cycle?

FIG. 8A

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Wrist Positions and Movements - Left Side

Extension	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3
Flexion	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3
Radial Deviation	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3
Ul. Nar. Deviation	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3

Performs work gestures of the same type involving the wrist for more than 50% of the cycle?



Extension / Flexion

Wrist Positions and Movements - Right Side

Extension	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3
Flexion	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3
Radial Deviation	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3
Ul. Nar. Deviation	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	3/3

Performs work gestures of the same type involving the wrist for more than 50% of the cycle?



Radial / Ul. Nar.

Type of Grip and Finger Movements - Left Side

Tight Grip (1.5cm)	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Pinch	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Palmar Grip	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Hook Grip	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Keying Grip	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Wide Grip (4.5cm)	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3

Performs work gestures of the same type involving the same finger(s) for at least 50% of the cycle?

Holds an object in a pinch, palmar or hook grip for at least 50% of the cycle?

Type of Grip and Finger Movements - Right Side

Tight Grip (1.5cm)	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Pinch	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Palmar Grip	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Hook Grip	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Keying Grip	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3
Wide Grip (4.5cm)	<input checked="" type="checkbox"/>	n/a	<input checked="" type="checkbox"/>	1/3	<input checked="" type="checkbox"/>	2/3	<input checked="" type="checkbox"/>	2/3

Performs work gestures of the same type involving the same finger(s) for at least 50% of the cycle?

Holds an object in a pinch, palmar or hook grip for at least 50% of the cycle?

FIG. 8B

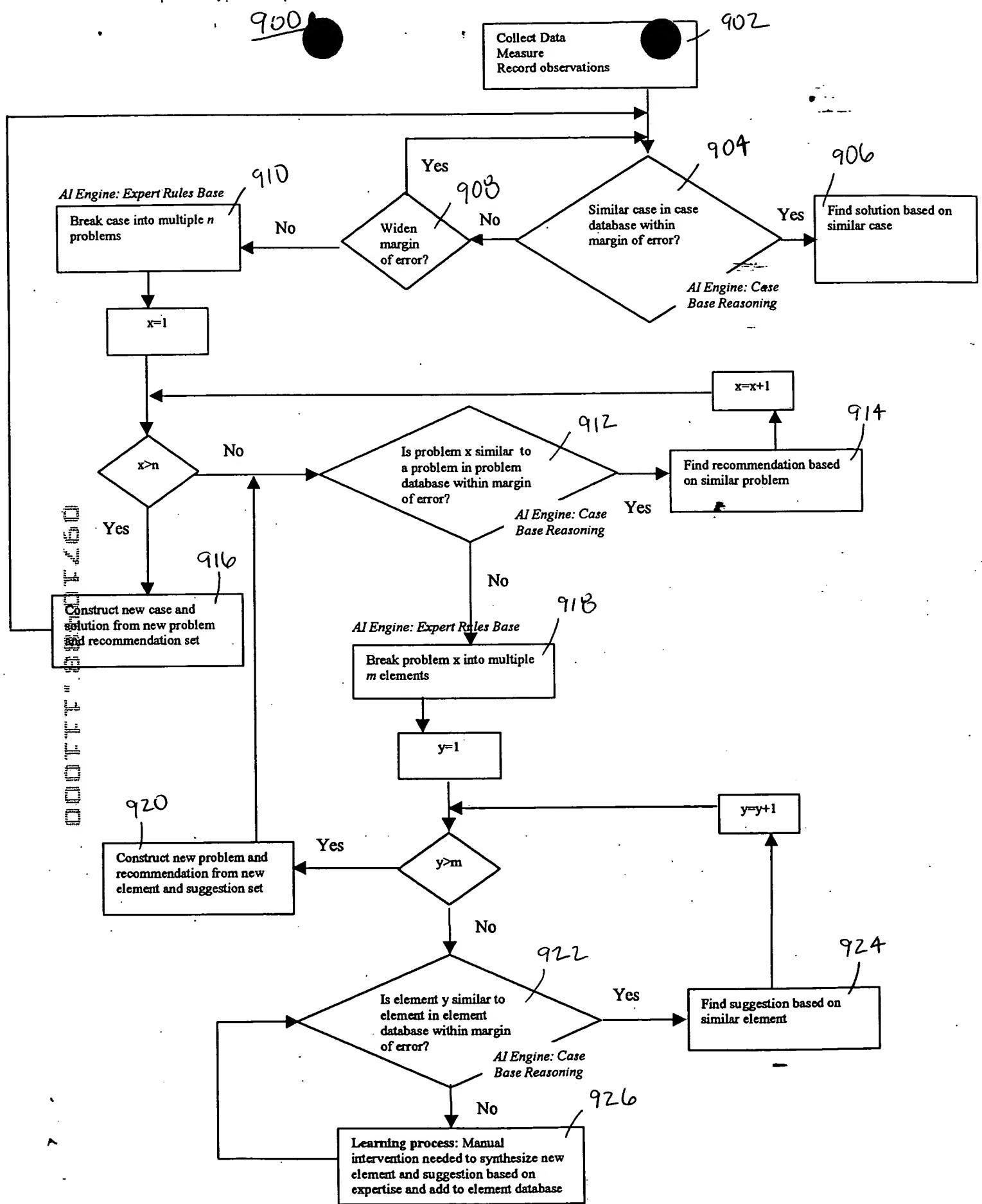


FIG. 9

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DATA FLOW DIAGRAM

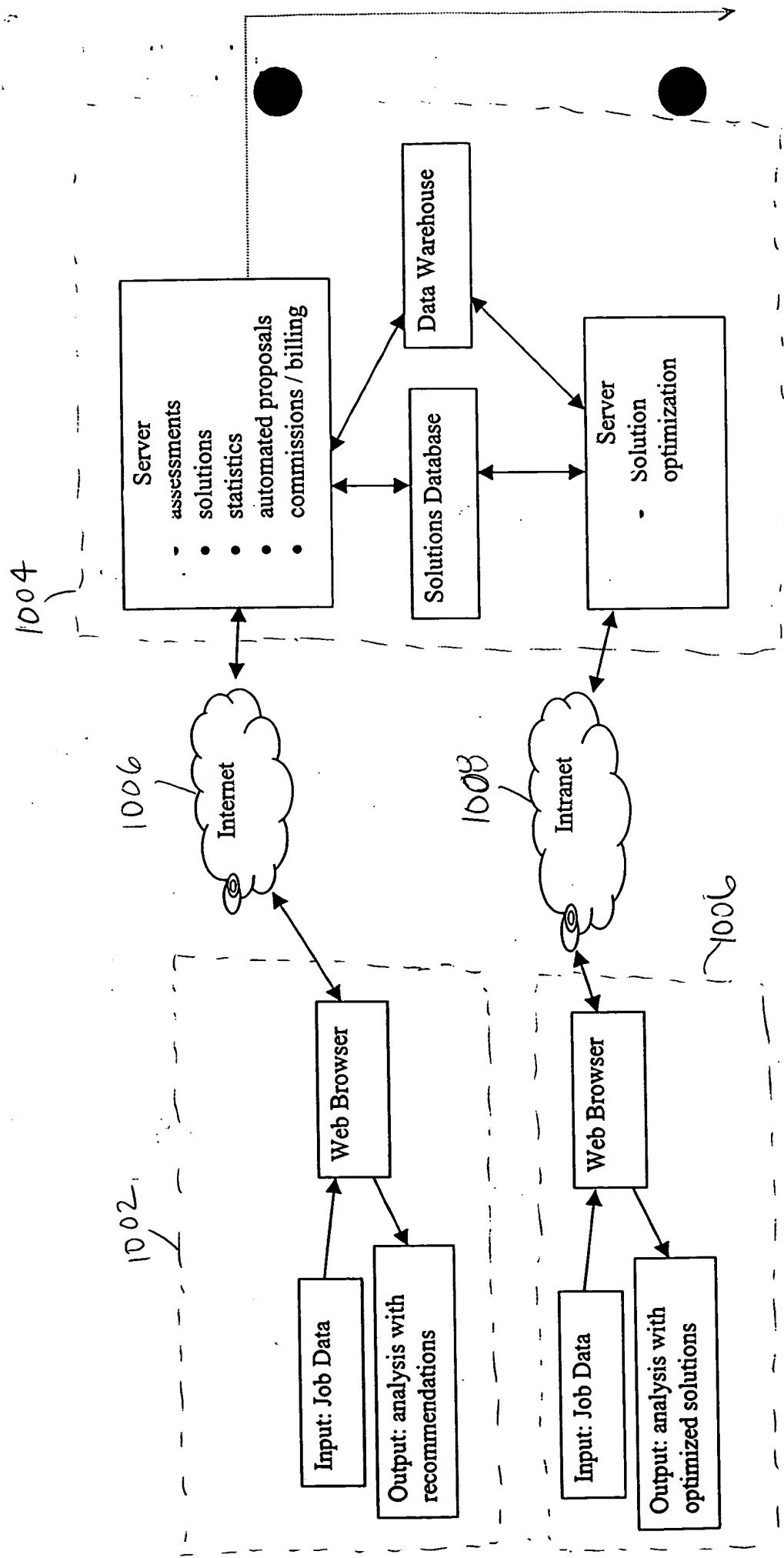


FIG 10